

169628 K.3  
11/01/94

**FIELD SAMPLING AND ANALYSES PLAN**

**DRUMMED WASTE REMOVAL**

**ENVIRO-CHEM SUPERFUND SITE  
ZIONSVILLE, INDIANA**

**PREPARED FOR:  
ENVIRONMENTAL CONSERVATION AND  
CHEMICAL CORPORATION TRUST**

**PREPARED BY:  
AWD TECHNOLOGIES, INC.  
INDIANAPOLIS, INDIANA**

**AWD PROJECT NUMBER 2455.002**

**NOVEMBER 1994**

## TABLE OF CONTENTS

<b><u>SECTION</u></b>		<b><u>PAGE</u></b>
<b>1.0</b>	<b>DRUM HANDLING AND STAGING</b>	<b>1-1</b>
1.1	General	1-1
1.2	Drum Evaluation and Personnel Protection	1-1
<b>2.0</b>	<b>SAMPLING EQUIPMENT AND PROCEDURES</b>	<b>2-1</b>
2.1	Bulked Soils (Pile)	2-1
2.1.1	Bulked Soil Pile Sampling Equipment	2-1
2.1.2	Procedure	2-1
2.2	Bulked Liquids (Tanker)	2-1
2.2.1	Liquid Waste Tanker Sampling Equipment	2-2
2.2.2	Procedure	2-2
2.3	Other Sampling Activities	2-3
2.4	Sample Types and Analyses	2-4
<b>3.0</b>	<b>SAMPLING EQUIPMENT DECONTAMINATION</b>	<b>3-1</b>
3.1	General	3-1
3.2	Applicability	3-1
3.3	Procedures	3-1
3.3.1	Decontamination Equipment List	3-1
<b>4.0</b>	<b>SAMPLE HANDLING AND TRACKING</b>	<b>4-1</b>
4.1	Sample Identification	4-1
4.2	Field Documentation	4-1
4.3	Chain-of-Custody	4-2
4.4	Sample Packaging and Shipping	4-3
4.4.1	Environmental Samples	4-3

## **1.0 DRUM HANDLING AND STAGING**

### **1.1 General**

Presently, there exists approximately 300 drums anticipated to have originated from past investigations and the remedial activities of previous and present contractors (i.e., drilling operations, pilot, and field studies, etc.) (see Appendix A). All drums and drum content will be handled, sampled, and removed during this action. Many drums are in poor and deteriorated condition. All drums will be surveyed for organic vapors and visually inspected prior to handling for health and safety purposes and possible special handling requirements.

### **1.2 Drum Evaluation and Personnel Protection**

Prior to handling or sampling of any drum those precautions and procedures as discussed in Section 2.0 of this Plan will be carried out. A Health and Safety Plan will be prepared by AWD for all field activities.

## **2.0 SAMPLING EQUIPMENT AND PROCEDURES**

### **2.1 Bulked Soils (Pile)**

A single simple composite sample shall be taken from the bulked soils pile. The composite sample will consist of a combination of four single grab samples taken at the mid-depth location within the center of each of the four pile quadrants. The four grab samples shall be placed directly into the sample container and they shall not be mixed in the field.

#### **2.1.1 Bulkled Soil Pile Sampling Equipment**

- Scoops or triers (stainless steel)
- Shovel
- Personal protective equipment
- Sample containers

#### **2.1.2 Procedure**

Field sampling procedures for collecting a simple composite soil pile sample are as follows:

1. Measure the soil pile footprint area and stake out the pile quadrants.
2. Access the center location of each pile quadrant and remove the soil overlying the mid-depth point within the pile using a scoop or shovel, as necessary.
3. Retrieve sufficient quantity of soil from each quadrant to fill one-fourth of the sample container total volume.
4. Cap the sample containers tightly and place in container carrier. Make sure the sample has been labeled, identified, and secured.

### **2.2 Bulked Liquids (Tanker)**

A single stratified grab sample shall be taken from the tanker.

### **2.2.1 Liquid Waste Tanker Sampling Equipment**

- Bailers (stainless steel), or
- Open tube samplers, or
- Pond samplers
- Personal protective equipment
- PVC pipe of sufficient strength
- Wrenches for tank port
- Sample containers

### **2.2.2 Procedure**

Field sampling procedures for collecting tanker content samples using an open tube sampler, pond sampler, or an open bucket sampler are as follows:

1. Gain access (e.g., steps, ladders, man-lift, etc.) to the tanker's top port.
2. Slowly open release valve (if any) to bring the tanker to atmospheric pressure.
3. Loosen access port/cover bolts and remove port/cover.
4. If no access port/cover is available, unscrew cap of top opening.
5. Insert a decontaminated sampling device into tanker slowly to allow stratified content (if any) to fill the sampler.
6. Retrieve the sampling device and wipe it with a disposable absorbent pad (place the pad in appropriate container).
7. Transfer the sample(s) into appropriate containers.
8. Repeat Step 5 until enough sample volume is obtained, as required.

9. Cap the sample container tightly and place in container carrier, make sure sample has been labeled and identified.
10. Replace cap or access cover and secure.

If sample collection from the tanker bottom valve is required (if the top port is inaccessible), the following additional steps will be included:

1. Make sure that sampling is carried out on the wastewater storage pad.
2. Place visqueen and sorbent pads beneath the valve area to collect any spills or leakage.
3. Place sample container beneath the valve.
4. Open valve slowly to ensure a slow, controlled flow of material.
5. After obtaining enough material, close valve securely.
6. Cap the sample container tightly and place in container carrier. Make sure sample has been labeled, identified, and secured.
7. Check valve for any signs of leaking. If leaking is not observed, pick up visqueen and sorbent pads, and place in appropriate container.

### **2.3 Other Sampling Activities**

The Sampling Team Leader will be responsible for recording all pertinent information into the sample logbook. At a minimum this will include the following:

- Sample location
- Sample number
- Material phase (i.e., solid, liquid, sludge, etc.)
- Sample time

- Sampler's initials
- Other observations

The above is in addition to other entries made at the start of each work day. Once sampling has been completed, the Sampling Team Leader will be responsible for delivering the samples to the sample receiving area at the decontamination pad. The Sampling Team Leader will then complete a chain-of-custody form and assist in readying the samples for shipment. This will involve documentation of sample numbers, date, time, and preservatives, as appropriate, as well as packing the "coolers" for shipment. Should there be an insufficient number of samples or some other reason for not readying samples for shipment, samples will be stored in the appropriate preservative until such time as they will be shipped.

## **2.4 Sample Types and Analyses**

Sample types, quantities, and analytical requirements are presented in Table 2-1.

**TABLE 2-1****SUMMARY OF FIELD SAMPLING AND ANALYSIS**

Waste Media	Phase	Number of Samples	Sampling Device	Sample Container	Sample Preservation	Holding Time	Analysis	Method Reference
Soils (Bulk Pile)	Solid	1	Trowel/Trier	(4) 16 oz. wide-mouth glass jars	Ice to 4°C	---	Paint Filter Liquids Test	40 CFR 268
						---	pH	40 CFR 268
						7 days	Total Cyanide	40 CFR 261
						7 days	Ignitability	SW-846 Method 1010, 1020
						7 days	Corrosivity	SW-846 Method 1110
						7 days	Reactivity - Cyanide/Sulfide	SW-846 Method 7.3.3.2, 7.3.4.2
						7 days	TCLP Extraction (D001-D043)	SW-846 Method 1311
Bulked Liquid Waste (Tanker)	Liquid	1	Stainless Steel Bailer/Open End Sampler	4 liter amber jug	Ice to 4°C	7 days	PCBs	SW-846 Method 8080
						7 days	TCLP Extraction (D001-D043)	SW-846 Method 1311

### **3.0 SAMPLING EQUIPMENT DECONTAMINATION**

#### **3.1 General**

The following describes standard operating procedures for the decontamination of equipment and tools that may come into direct contact with a field sample intended for analytical analysis. This procedure only addresses the decontamination of equipment as it pertains to the chemical integrity of samples for analysis and is not intended for use in health and safety decontamination of personnel, materials, and equipment that may become contaminated during field operations.

#### **3.2 Applicability**

Decontamination of all analytical devices, sampling tools, and storage equipment that may come into direct contact with a field sample are necessary in order to achieve analytical results that are representative of true field conditions.

#### **3.3 Procedures**

All equipment will be considered contaminated unless determined otherwise. In order to provide consistency to the decontamination procedure, a designated sampling team crew member will be responsible for equipment decontamination. Similarly, it is desirable to decontaminate all the equipment necessary for a field task in the laboratory prior to mobilization. In this way, field decontamination will be limited.

##### **3.3.1 Decontamination Equipment List**

The following equipment is needed for equipment decontamination:

- Clean disposable rubber gloves
- Wastewater container (drum)
- Clean water spraying device

- Clean brushes
- Plastic garbage bags
- Deionized/distilled water (DI water)
- Clean buckets and other containers, as needed (small plastic swimming pool)
- Plastic ground sheet (Visqueen)
- Aluminum foil
- Package labels and pen
- Potable water, warm if available
- Steam cleaner (optional)
- Non-phosphate detergent

Decontaminated equipment not intended for immediate use may be placed in plastic bags and sealed. All handling of decontaminated equipment will be performed using disposable rubber gloves. Care will be exercised in the storage of decontaminated equipment. Sampling personnel will avoid solvents, greases, oils, gasoline, water, dusts, and other potential sources that might contaminate the equipment before use.

## **4.0 SAMPLE HANDLING AND TRACKING**

### **4.1 Sample Identification**

Each sample collected will be assigned a unique identification number and placed in an appropriate sample container. Each sample container will have a sample label affixed to the outside with the date, time of sample collection, site name, type of sample, and sampler's name recorded on the label. In addition, this label will contain the sample identification number, analysis required and chemical preservative added, if any. All documentation will be completed in waterproof ink.

The sample identification number will be a unique alphanumeric code which will identify the project site, sample location, sample type, and sample number. The sample ID for specific locations will have the following for group identifiers:

Site Code - Sample Location - Sample Type - Sample Number

The alphanumeric code for each sample will initiate with the three-letter project site code: ECC.

The sample type identifiers will be as follows:

- TK - Tanker Content
- S - Soils (Bulk)

For example, the sample from the tanker shall be identified as:

ECC-TK - 01

### **4.2 Field Documentation**

Field notebooks will be maintained by the Sampling Team Leader to record all data collecting activities performed at the site. Entries will be as descriptive and detailed as necessary so that a particular situation can be reconstructed without reliance on the collector's memory.

At a minimum, entries will consist of the following:

- Date
- Start date
- Weather
- Field personnel present
- Signature of the person making the entry
- Type of activity conducted
- Sampling location
- Sample identification number
- Description of depth of sampling point
- Type of sample (matrix)
- Pertinent field observations

All measurements made and samples collected will be recorded. All entries will be made in indelible ink. No erasures will be permitted. If an incorrect entry is made, the data will be crossed out with a single strike mark and initialed. Entries will be organized into easily understandable tables, if possible.

#### **4.3 Chain-of-Custody**

To maintain and document sample possession, the following chain-of-custody procedures will be followed. A chain-of-custody record will be completed once the samples are brought to the on-site sample receiving area. This record will include, but not be limited to, the following information:

- Project name and number
- Name(s) of sampler
- Sample identification number and location
- Date and time of collection
- Number and type of containers
- Required analyses
- Preservatives
- Courier
- Signatures documenting change of sample custody

Chain-of-custody forms will accompany any and all samples which are shipped off-site. When transferring possession of the samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of transfer on the record. A commercial delivery service (for example, Federal Express) will be identified by company name only. Additionally, the samples will remain in the physical possession of the person assigned to the sample until they are shipped to the laboratory or will be placed in a locked storage facility prior to shipping. The original chain-of-custody record will accompany the sample to the analytical laboratory and will be returned to the Remedial Contractor with the analytical results. A copy of each record will be placed in the project file.

#### **4.4    Sample Packaging and Shipping**

Samples will be shipped as environmental samples according to applicable guidance documents and DOT regulations.

##### **4.4.1            Environmental Samples**

Sample packaging and shipping procedures are described below:

- Secure sample bottle lids with strapping tape or evidence tape. Check that sample label is securely attached.
- Mark volume level on bottle with grease pencil.
- Place about 3 inches of inert cushioning material such as vermiculite in bottom of cooler.
- Place containers in cooler in such a way that they do not touch.
- Put VOA vials in Ziploc bag and place them in the center of the cooler.
- Pack bottles in loose ice or ice in plastic bags.
- Fill cooler with cushioning material.

- Put paperwork in plastic bags and tape to inside lid of cooler.
- Tape drain shut.
- After acceptance by Federal Express or shipper, wrap cooler completely with strapping tape at two locations. Do not cover any labels.
- Place lab address on top of cooler.
- Put "THIS SIDE UP" labels on all four sides and "FRAGILE" labels on at least two sides. ("FRAGILE" labels are optional for coolers not containing glass bottles.)
- Affix signed custody seals on front right and back left of cooler. Cover seals with wide, clear tape.



---

**DRAFT**

**EVALUATION OF ALTERNATIVES MEMORANDUM  
REVISED REMEDIAL ACTION**

**ENVIRO-CHEM SUPERFUND SITE  
ZIONSVILLE, INDIANA**

**PREPARED FOR**

**ENVIRONMENTAL CONSERVATION AND  
CHEMICAL CORPORATION TRUST**

**PREPARED BY**

**AWD TECHNOLOGIES, INC.  
PITTSBURGH, PENNSYLVANIA**

**AWD PROJECT NUMBER 2455.001**

**DECEMBER 1994**



*A Subsidiary of  
The Dow Chemical Company*